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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,846	04/15/2004	John M. Nieminen	07508-055001	6867
26161	7590	01/08/2009	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022				BHAT, ADITYA S
2863		ART UNIT		PAPER NUMBER
NOTIFICATION DATE		DELIVERY MODE		
01/08/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/824,846	NIEMINEN ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	ADITYA BHAT	2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 October 2008.  
 2a) This action is **FINAL**.                  2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.  
 4a) Of the above claim(s) 38-46 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-17 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 15 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

### ***Status***

1. Claims 1-17 are currently pending in this application. Claims 18-37 have been canceled and 38-46 have been withdrawn from further consideration.

### ***Priority***

2. Currently, no foreign priority has been claimed

### ***Drawings***

4. The drawings submitted on 4/15/2004 are in compliance with 37 CFR § 1.81 and 37 CFR § 1.83 and have been accepted by the examiner.

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Specifically, the process steps should (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. If neither of these requirements is met by the claim, the method is not a patent eligible process under 35 USC § 101 and has been rejected as being directed towards non-statutory subject matter.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, it is not clear what position is being adjusted. Is applicant referring to the position of an object, the signal, etc? Further it is unclear what constitutes a disturbed and undisturbed field.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Govari (EP 1 203 560 A2) in view of Ashe (USPUB 2003/0011359)

With regards to claim 1, Govari teaches a distortion compensation method comprising:

determining an undisturbed phase for at least one of a first position indication signal and a second position indication signal; (Page 3, paragraph 0020)

determining a disturbed amplitude and phase of the position indication signal; and adjusting a position indication based on the disturbed amplitude and phase, and the undisturbed phase. (Page 7, paragraph 0051-0053)

Govari does not appear to teach determining an undisturbed ratio that relates the amplitude.

Ashe (USPUB 2003/0011359) teaches determining an undisturbed ratio that relates the amplitude. (page 6, paragraph 0061)

It would've been obvious to one of ordinary skill in the art at the time of the invention modify the Govari invention to determine the undisturbed amplitude ratio as taught by Ashe in order to provide a system which avoids loss of transmit field intensity with the intended operating volume. (Page 5, Paragraph 0035)

With regards to claim 2, Govari teaches calculating a relationship between the phases of the first position indication signal and the second position indication signal. (Page 6, paragraph 0046)

With regards to claim 3, Govari teaches determining a second undisturbed ratio that relates the amplitude of either of the first and the second position indication signals to the amplitude of a third position indication signal at a third frequency, (Page 6, paragraph 0046) and

adjusting a position indication is further based on the second undisturbed ratio. (Page 7, paragraph 0051-0053)

With regards to claim 4, Govari teaches the first frequency is a superior harmonic of the second position indication signal and the second frequency is a subordinate harmonic of the first position indication signal. (Page 6, paragraph 0046) The frequency corresponding to field H1 is considered to be the super harmonic and the subordinate is the frequency corresponding to field H2.

With regards to claim 5, Govari teaches the superior harmonic is the fundamental frequency. (Page 6, paragraph 0046) The frequency corresponding to H1.

With regards to claim 6, Govari teaches the subordinate harmonic is a third order harmonic. (Page 6, paragraph 0046) Frequency corresponding to H3.

With regards to claim 7, Govari teaches the first frequency is less than the second frequency. The frequencies of all the field generating coils will change depending on the location of the article that is introduced into the field. If it is introduced at a location closer to the first coil then the frequency of the disturbed field will be greater at that coil then at the second and third coils.

With regards to claim 8, Govari teaches generating a plurality of frequencies using a multiple frequency waveform. (Page 6, paragraph 0048)

With regards to claim 9, Govari teaches the multiple frequency waveform is a chirped waveform. (Page 6, paragraph 0047) This section teaches a amplitude, frequency and phase. From this we can conclude that the signal must be a chirped waveform.

With regards to claim 10, Govari teaches the selected first frequency and second frequency are harmonically related. (see claim 4)

With regards to claim 11, Govari teaches the distortion compensation method is repeated for a plurality of position indication signals. (page 3, paragraph 0043-0046)

With regards to claim 12, Govari teaches detecting the presence of an eddy current in a conductive object. (Page 3, paragraph 0013)

With regards to claim 13, Govari teaches detecting the presence of an eddy current includes monitoring a ratio of the amplitude of the first position indication signal and the amplitude of the second position indication signal. (page 6, paragraph 0049)

With regards to claim 14, Govari teaches detecting the presence of an eddy current includes detecting a change in the undisturbed phase. (Page 3, paragraph 0011-0013)

With regards to claim 15, Govari teaches wherein determining the undisturbed phase includes measuring asymptotic phase values and using the asymptotic phase values to calculate the undisturbed phase. (page 7, paragraph 0051)

With regards to claim 16, Govari teaches determining the undisturbed phase includes iteratively calculating phase values and adjusting an asymptotic phase value, the asymptotic phase value used to calculate the undisturbed phase. (Page 3-4 paragraphs 0020-0021)

With regards to claim 17, Govari teaches receiving from a sensor the real components of the first and second position indication signals. (page 7, paragraph 0052) It is unclear how the sensor would detect an imaginary component of a signal. Imaginary components maybe used in calculations but it is unclear how they maybe sensed using a sensor.

***Response to Arguments***

**11.** Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

**12.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shim et al. (USPN 7,253,987) teaches disturbance signal reduction in servo systems.

**13.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S. Bhat whose telephone number is 571-272-2270. The examiner can normally be reached on M-F 9-5:30.

**14.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**15.** Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2863

/Aditya Bhat/  
Examiner, Art Unit 2863  
January 2, 2009